

THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[SEVENTH SERIES.]

No. 50. FEBRUARY 1902.

XVII.—*New Species of Eastern and Australian Heterocera.*
By Colonel C. SWINHOE, M.A., F.L.S., &c.

Family Syntomidæ.

Syntomis sala, nov.

♂ ♀. Black, antennæ with white tips; frons, collar, a transverse stripe at base of thorax, and segmental bands of abdomen ochreous; the abdomen of the female is much more ochreous, and might be described as ochreous with thin black bands; spots hyaline: fore wings with a wedge-shaped spot filling outer part of cell, a spot below base of cell, another beyond it in the submedian interspace; sometimes these are conjoined, filling nearly the whole interspace; two discal spots in the interspaces between veins 3 and 5, an elongated spot above vein 6 near the apex, and a smaller one in the interspace above it, always in the female, only sometimes in the male: hind wings with the basal half hyaline, divided by vein 2 from the discal spots, the costal and marginal borders being broadly black.

Expanse of wings $1\frac{8}{10}$ inch.

Kina Balu (Everett).

Syntomis verecunda, nov.

♂. Antennæ black; head, thorax, and abdomen dark bright ochreous; bands black, one behind the eyes, another behind the collar, three longitudinal stripes on thorax, one transverse at the base, six on the abdomen with the extremity broadly green-black and glistening: wings hyaline, tinged with ochreous; a bright ochreous stripe between costa and subcostal vein and another on vein 1; a prominent black subbasal spot below base of cell; a black band dividing the submedian interspace and finer band closing the cell; costal, outer, and inner borders black; all the veins black; a black patch at apex and another on the outer margin between veins 2 and 3: hind wings with the costa and outer margin broadly black, the black colour thickened at vein 2 and running up the vein to a point, the outer portions of the hyaline parts thickly smeared with bright ochreous.

Expanse of wings $1\frac{4}{5}$ inch.

Jaintia Hills.

Allied to *S. fervida*, Walker, of which I have a fine series from the Khasia Hills; differs in the prominent subbasal black spot of fore wings and the hyaline interspace between veins 5 and 6; in *fervida* it is nearly all filled in with black and is much narrower and differently shaped; in one of my examples of *fervida* vein 4 has a small veinlet, so that the black band filling the interspace looks as if it threw off three veinlets on to the margin.

Syntomis aureola, nov.

♂. Antennæ with white tips; head and body golden yellow; a black line between the antennæ, blackish longitudinal stripes on thorax diffusely filling the centre in this sex, a transverse stripe at the base, and seven black bands on the abdomen with the extremity narrowly black: fore wings dark chocolate-black; a bright golden band between the costa and subcostal vein, a golden stripe on vein 1, and most of the outer parts of the hyaline spots smeared with golden yellow on both wings: fore wings with the submedian interspace hyaline, divided in the centre by a wedge-shaped black bar; a wedge-shaped hyaline spot filling cell, a small spot at base of interspace between veins 2 and 3, a pair of discal spots in the next two interspaces, a long spot in the interspace above vein 6 and a smaller one above it: the hind wings are mostly hyaline, with broad black costa and outer margin, the black running up vein 2 to the cell, and thus dividing the wing into two hyaline portions.

♀. Only differs from the other sex in being more golden; the thorax very bright, with distinct black stripes; the abdomen with only six bands; the wings with the hyaline spots larger.

Expanse of wings $1\frac{6}{10}$ – $1\frac{7}{10}$ inch.

Khasia Hills.

Allied to *S. Grotei*, Moore, from Yunnan, the type of which I have carefully examined; but the extremity of the abdomen is black in both sexes, and not yellow as in *Grotei*, and the costa of the hind wing is black, and not orange; it is nearer to *S. submarginalis*, Walker; the hyaline spots are very similarly disposed, but the submedian interspace on fore wings in that species is not wholly hyaline, and the outer portions of the wing are golden, whereas in this species they are black.

Family Geometridæ.

Subfamily *MENOCTENINÆ*.

Nearcha ophla, nov.

♂. Top of head and shaft of antennæ white, branches black; body and wings with the ground-colour ochreous grey, nearly white, irrorated with black atoms, the irrorations thicker on the fore than on the hind wings, making them darker-coloured: fore wings with a black ringlet at end of cell, indications of an interior line; a discal black line with black points; in some examples the space between is filled in with densely packed irrorations, making a broad medial band, also submarginal and marginal bands of pale blackish spots joined together, the margin with black points: the hind wing has a blackish spot at the end of the cell, a central line corresponding to the discal line of the fore wings, submarginal and marginal bands, and marginal black points as in the fore wings, but paler. Underside whitish, with some of the markings showing through the wings.

♀. Like the male, but generally darker. There are eleven examples in the B. M. and five in the O. M., all collected together and mostly differing a little one from the other.

Expanse of wings $1\frac{1}{10}$ inch.

Sherlock River, W. Australia (*Clement*).

Types (♂ ♀) in B. M.

Nearcha alba, nov.

♂ ♀. Both sexes above and below pure white, shining; the branches of the antennæ in the male are more or less grey,

the costa of fore wings has a slight tinge of ochreous; otherwise the examples are absolutely without markings.

Expanse of wings, ♂ $1\frac{8}{10}$, ♀ 1 inch.

Sherlock River, W. Australia (*Clement*).

Types (♂ ♀) in B. M.

Family Lithosiidæ.

Nishada melanistis, nov.

♂. Antennæ, head, and collar ochreous; a chocolate-coloured spot on the head and two on the collar; abdomen chocolate-brown, long hairs on each side and anal tuft ochreous: fore wings dark chocolate-brown, costal border broadly ochreous, as also are the cilia, except towards the hinder angle, where the inner portions are chocolate: hind wings bright ochreous, with the outer margin suffused with brown; in some examples there is almost a complete band, in others there is only a slight edging; cilia ochreous, tinted with brown towards anal angle. Underside, palpi, body, and legs ochreous; wings much as above, except that the inner lower area of fore wings is pale and there is no border to hind wings.

Expanse of wings $1\frac{1}{10}$ inch.

Kina Balu (*Everett*).

Family Lymantriidæ.

Aroa flaveofusca, nov.

♂. Antennæ with the shaft ochreous, branches black; head dark ochreous, body brown: fore wings brown, with a large portion of the interior of the wing ochreous; in one example the fore wing is nearly all brown; there is also a large black spot at the end of the cell; cilia ochreous, marked with brown: hind wings brown, the abdominal margin and more than one third of the lower portion of the wing bright ochreous; cilia ochreous, the upper part marked with brown. Underside uniform ochreous; a black spot at end of each cell: fore wings with a brown subapical wavy band; a short longitudinal band or shade from the base on the hinder margin: hind wings with a brown apical patch.

Expanse of wings $1\frac{8}{10}$ inch.

Lawas, Borneo (*Everett*).

There is an example of this species unnamed in the B. M. from Sandakan.

Euproctis calesia, nov.

♀. Antennæ with the shaft dull yellow, the short branches brown; head, thorax, and fore wings dull ochreous; a few orange scales in front of thorax: fore wing irrorated with minute brown atoms, which thicken a little on the lower portions of the wings; a large blackish-brown spot at the end of the cell: hind wings blackish brown, dull ochreous towards outer margin, and the cilia of the same colour. Underside dull ochreous, all but the outer margins of both wings suffused and irrorated with brown.

Expanse of wings $1\frac{3}{10}$ inch.

Lawas, Borneo (*Everett*).

There is an example of this species unnamed in the B. M. from Sandakan.

Darala figlina, nov.

♂. Of a uniform dark olive-brown colour; shafts of antennæ black, frons ochreous; an ochreous spot in the cell of fore wings, in some examples a minute dot above it and another below it, all close together; a larger spot at end of cell, composed of two spots joined together; a discal band of indistinct blackish lines on the veins: hind wings without markings; cilia of both wings ochreous. Underside as above, but paler; hind wings with a small ochreous spot.

Expanse of wings $1\frac{2}{10}$ inch.

Sherlock River, W. Australia (*Clement*).

Type in O. M.

There are three unnamed examples in the B. M. from the same locality.

Darala Clementi, nov.

♂ ♀. Of a uniform brown colour, without any markings above or below; the male has the shafts of the antennæ pale and the branches brown; there is a red tinge on the frons just above the palpi; the ground-colour of the wings is really ochreous grey, but the brown irrorations are so thick that they make the entire surface of both wings uniform brown; at some angles there is an appearance of a dark fascia or band across the centre of both wings above, and there are some long greyish hairs near the base of both wings. The underside is a little paler than the upperside. The female is similarly coloured, but much paler.

Expanse of wings, ♂ $1\frac{4}{10}$, ♀ $1\frac{6}{10}$ inch.

Sherlock River, W. Australia (*Clement*).

Types (♂ ♀) in B. M.

Family Lasiocampidæ.

Clathe fola, nov.

♂ ♀. Of a uniform grey tinged with mouse-colour; a broad central band on fore wings of slightly darker colour, edged on both sides with white, the band of nearly even width; an indistinct grey spot at the end of cell: hind wings uniform in colour, without markings, the coloration slightly darker than on the fore wings.

Sexes alike, the female slightly the paler.

Expanse of wings, ♂ $1\frac{8}{10}$, ♀ $1\frac{1}{10}$ inch.

Sherlock River, W. Australia.

Types (♂ ♀) in B. M.

Sittina rhoda, nov.

♂. Head, collar, and shoulders cream-colour; antennæ, body, and wings dark chocolate-brown; abdomen white at the tip: fore wing with the discal portion hyaline, the costa and apex broadly brown, the outer margin narrowly brown and paler; a white spot at end of cell, a small white patch near centre of hinder margin, an indistinct line of white dots from it through the middle of the hyaline space to the costa one fifth from apex, where there is another white spot. Under-side: body cream-colour; fore wing as above; hind wing with a broad white central band, which is more or less visible above.

♀. With the antennæ, head, thorax, tip of abdomen, and the entire body below cream-colour, the abdomen and both wings above pale greyish chocolate; the portion of the fore wing hyaline in the male is cream-coloured in this sex; the costa and outer margin broadly and evenly greyish chocolate; spots as in the male; the band on the underside of the hind wings distinct and even as on the upperside, and also a submarginal band of cream-coloured spear-shaped marks with grey centres across both wings.

Expanse of wings, ♂ $1\frac{2}{10}$, ♀ $2\frac{2}{10}$ inches.

Sherlock River, W. Australia (*Clement*).

Types (♂ ♀) in B. M.

Family Acontiidæ.

Megalodes pura, nov.

♂ ♀. Head, thorax, and fore wings pure white; a brown spot in cell, from which there is a line of brown dots to hinder margin a little before the middle; another similar line in the

disk and brown points on the margin: hind wings grey, with white cilia.

Expanse of wings $1\frac{2}{6}$ inch.

Sherlock River, W. Australia (*Clement*).

Types (σ ♀) in O. M.

Family Sarothripidæ.

Hyblæa canisigna, nov.

σ . Dark ferruginous brown, with an olive tinge on fore wings; palpi, head, and collar dark chocolate-brown; a prominent white mark behind the collar made of four distinct pieces ($\overline{\text{II}}$): fore wings with a central band, elbowed outwardly above its middle, the upper part outwardly shaded with dark chocolate, the lower part having its inward area of the same colour; a discal recurved thin band; an apical short band, the cilia in front of this band just below apex of an ochreous colour, rest of cilia concolorous with the wing: hind wings dark chocolate-brown, with two ochreous basal streaks and three bright ochreous spots, one in the upper disk and two even with the outer margin; cilia bright ochreous. Underside: face yellowish white, body and legs bright ochreous with brown bands; wings dark brown, with bright ochreous markings and many spots.

Expanse of wings $1\frac{4}{8}$ inch.

Kina Balu (*Everett*).

The fore wings are coloured like those of *H. saturata*, Walker, which I have from Sarawak, Pittang, and Pattan. The spots on hind wings and the white mark behind the collar are very distinctive.

Family Palindidæ.

Pterogonia nerissa, nov.

σ . Palpi olive-grey, with the last joint black, smeared with some white scales; head, thorax, and fore wings olive-brown; frons, head, collar, and centre of thorax smeared with white scales: fore wings with a brown spot at upper and another at lower end of cell, the entire wing covered with very minute brown striations; some white points on costa, some on discal portions of the wings; a small white spot near hinder margin towards the angle; a white smear at apex, down to vein 6, and a few white spots on the margin below the apex: hind wings blackish brown, the middle portion of the cilia ochreous grey.

Expanse of wings $1\frac{8}{10}$ inch.

Perak (*Kunstler*).

Allied to *P. nubes*, Hampson, from Ceylon, the type of which is a female, but the fore wings are very differently shaped.

Family Stictopteridæ.

Gyrtona tripartita, nov.

♂. Chocolate-brown; frons and top of head dark brown: fore wings divided into three uniform parts by two lines, ante- and postmedial, the former straight, inclining a little inwards from costa, the latter sinuous, both duplex, with pale centres and shaded exteriorly with dark brown; a sinuous indistinct line between them and two outer, indistinct, lunular lines, pale with dark edgings, the outermost one submarginal, with the marginal space filled in with dark brown, marginal line black, with pale inner edging: hind wings blackish brown, without markings. Underside uniform brown; fore wings with a small whitish streak near apex and four points on costa.

Expanse of wings $1\frac{4}{10}$ inch.

Goping, Perak (*Kunstler*).

There are specimens from Penang and from Pulo Laut in the B. M. unnamed.

Family Quadridæ.

Prorocopsis tyra, nov.

♂ ♀. Head, thorax, and fore wings dark olive-grey: fore wings with black transverse lines, basal nearly straight, antemedial outwardly curved and elbowed in the middle, and discal deeply recurved in its middle; there is also a grey-shaded thick band between the discal band and the outer margin; a black crenulated marginal line: abdomen and hind wings whitish, shaded with grey towards outer margin. Underside white, fore wings with brownish tips; otherwise without markings.

Expanse of wings, ♂ $\frac{8}{10}$, ♀ $1\frac{2}{10}$ inch.

Sherlock River, W. Australia (*Clement*).

Types (♂ ♀) in B. M.

Ercheia multilinea, nov.

♀. Palpi ochreous grey, with brown bands; head and thorax ochreous grey, the latter streaked with brown; collar brown: fore wings with a large egg-shaped whitish ring,

with dark brown interior, filling the end of the cell; the ground-colour of the wings is ochreous grey, with a slight pinkish tinge, and the whole surface is streaked with longitudinal streaks in the interspaces of black, brown, chestnut, and white; the antecilia line is whitish and the cilia brown: the hind wings are of the normal type of *Ercheia*, ochreous grey, with a whitish central fascia, broad brown outer border, with white patches on the margin: on the underside also are the ordinary markings of *Ercheia*, ochreous grey, with brown discal bands and postmedial lines.

Expanse of wings $2\frac{6}{10}$ inches.

Goping, Perak (*Kunstler*).

There is an example in the B. M. from Perak unnamed.

Family Focillidæ.

Zethes magniplaga, nov.

♂. Of a uniform ochreous grey, slightly tinged with pale pink; second joint of palpi with blackish bands; thorax dark chocolate-brown on each side; bands and spots on the wings of the same colour, very dark, nearly black; a subbasal band on fore wings, a very large patch on the outer margin which extends from the apex to the middle and curves in and upwards in a hook-like formation; a longish spot close to the anal angle of hind wings; both wings are crossed by an indistinct sinuous grey thin band or fascia; a duplex straight grey line from apex of fore wings to anal angle of hind wings above the anal spot, not visible in the apical patch; a sinuous grey thin band between this and the outer margin; some pale submarginal points, most distinct on the large apical patch. Underside pale uniform ochreous grey, with two outer transverse grey lines.

Expanse of wings $1\frac{8}{10}$ inch.

Fergusson Island (*Meek*).

I have a paler example from St. Dignan, and there are also two examples from Fergusson Island unnamed in the B. M.

Family Hypenidæ.

Subfamily DELTOIDINÆ.

Diomea eupsema, nov.

♂. Pale uniform chocolate-brown, slightly tinged with ochreous; palpi dark brown; collar cream-coloured: fore wings with several black triangular marks on the costa from base to one third from apex; at the apex there is a small

black patch inwardly edged with cream-colour; an ear-shaped black mark at the end of the cell, many black minute irroration on the inner portion of both wings, and an indistinct submarginal pale band also on both wings. Underside much paler than on the upperside, very uniform in coloration and without markings.

Expanse of wings $1\frac{3}{10}$ inch.

Gopong, Perak (*Kunstler*).

Allied to *D. livida*, Hmps., but distinguishable for want of the discal dentated black line with white points across fore wings, which is a prominent feature of that species.

There is an example in the B. M. from Sandakan, Borneo, without name.

Nicevillea epiplemoides.

Nicevillea epiplemoides, Hmps. Moths of India, iv. p. 540 (1896)

The type is a female from the Downat Range, Tenasserim.

♂. Antennæ one third longer than the costa of fore wings, much longer than in the female, with stiff bristles to the tips; the abdomen extends one third beyond the hind wings, the anal tuft is as long as one third the length of the abdomen and consists of four membranes thickly coated with ciliated short hairs; there are several brown specks in a row outside the brown discal line of the fore wings, in addition to the two mentioned by Hampson in his description of the female; otherwise the markings and coloration of the male are similar to those of the female.

Lawas, N. Borneo (*Everett*).

Corcobara longipennis, nov.

♂. Antennæ, palpi, thorax, and fore wings rich chestnut-brown, the upper and lower sides of the palpi dark-coloured, nearly black; head and collar ochreous grey: fore wings streaked with brown, a black diffused spot near lower end of cell, with a white speck above it; a brown curved line from above centre of disk to apex, the outer portion of the wing more or less shaded with brown: hind wings greyish brown, paler towards the base, and with pale cilia, slightly ochreous: underside pale greyish ochreous; a brown lunular mark at end of each cell, a broad brown discal band on fore wings, a similar marginal band on hind wings.

Expanse of wings 2 inches.

Java (*Fruhstorfer*).

There is an example of this species, also from Java, unnamed in the B. M.

Subfamily *HYPENINÆ*.Genus *ARRADE*, Walker.

Arrade, Walker, xxvii. 82 (1863); Himpsn. Moths of India, iii. p. 99 (1895).

Ziza, Walker, xxvii. 118.

Lophocraspedon, Himpsn. Ill. Het. ix. p. 135 (1893).

Arrade ostentalis.

Ziza ostentalis, Walker, xxvii. 119.

Goping, Perak (*Kunstler*).

XVIII.—*On an Amioid Fish* (*Megalurus Mawsoni*, *sp. n.*)
from the Cretaceous of Bahia, Brazil. By A. SMITH
WOODWARD, LL.D., F.R.S.

[Plate II.]

ANOTHER small collection of vertebrate fossils from the Cretaceous Formation of Bahia, Brazil, lately presented to the British Museum by Joseph Mawson, Esq., F.G.S., contains the greater part of the skeleton of an Amioid fish. As no typical Amioids have hitherto been discovered in South America, the new specimen is of considerable interest and worthy of special notice.

This fossil comprises the greater part of the fish except the head, and most of it is in counterpart. The actual bones are preserved in the dark shaly matrix, and the specimen is associated with part of a small example of *Diplomystus longicostatus* *.

The best side of the fossil is shown of the natural size in Pl. II. A few vertebræ are evidently lacking anteriorly, but the others are well preserved in almost undisturbed series, and about sixty-five centra can be counted. These centra are much constricted, smooth, and without lateral pits; all are deeper than long, except in the upturned caudal extremity. The ribs and neural arches in the abdominal region are very small and slender. The neural arches in this region are not fused with the centra, of which some are displaced and exhibit the facettes for their support. The neural and hæmal arches in the caudal

* A. Smith Woodward, "On Two Deep-bodied Species of the Clupeoid Genus *Diplomystus*," Ann. & Mag. Nat. Hist. [6] vol. xv. (1895) p. 2, pl. i. fig. 1.